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## Designing online learning environments for local contexts, as exemplified in the Sultanate of Oman

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**Designing Online Learning Environments for  
Local Contexts,  
as exemplified in the Sultanate of Oman**

A thesis in partial fulfilment of a Doctorate in Education

from the

**University of Wollongong**

by

**Andrea Hall,**

**B.Sc., NZMLT, Dip SLT, M. Ed.**

**Faculty of Education**

**2009**

## **Certification**

I, Andrea Hall, declare that this thesis, submitted in partial fulfilment of the requirements for the award of a Doctorate of Education in the Faculty of Education, at the University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualifications at any other academic institution

Andrea Hall

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## **Abstract**

Online learning has a significant role in teaching and learning as it can be used to address the issues of quality and access to learning in higher education. However, for online learning to provide an effective solution, it needs to be designed to meet the learning needs of the students. This includes the consideration of their cultural preferences, as it is generally presumed that these significantly affect how people learn, and consequently affect learning success if courses are not designed appropriately.

This is particularly important for the Sultanate of Oman, the focus of this study. Since Oman's renaissance in 1970, it has made impressive steps in the development of its education system from a mere three schools in 1970 to over a thousand in 2006 including over 20 higher education colleges and universities; but still faces the challenges of providing sufficient higher education and of sufficient quality for its rapidly expanding student population. If online learning is to be used to respond to these challenges, then the effect of cultural values and preferences must be considered in the way that learning is designed. However, there is little in the literature on how people in this culture learn, how they learn online, and how learning may be designed in a culturally-suitable manner. This is the problem investigated in the research: if culture does impact learning, how can learning be designed in a way that considers cultural values, and enables a successful learning experience? This thesis describes the development and refinement of design principles as an effective means to design culturally appropriate learning environments for higher education in the Sultanate of Oman.

A Design-based Research approach was selected to for this study, as it can be used to develop a design solution that has been tested and refined in a genuine learning context, thus making the solution more useable and robust. This approach begins with the identification of the teaching and learning problem, then the proposal of a draft design solution from a literature review. This is followed with iterative testing in a genuine context, so that the theory is informed and modified in the learning

environment. The final stage is the production of refined design guidelines and a modified learning environment that is specific for the context where it was tested

In this investigation, existing design models and principles were identified in the literature. These were used to develop design criteria to guide in the development of a design solution. From the literature review, concepts from Vygotsky's sociocultural theory were extracted for the design solution as they were found to meet the design criteria more effectively than any other theories that were examined. The five online learning themes of social presence, interaction, collaboration, cognitive strategies, and student-centred learning were identified as a means to apply these theories to the learning design, and it was also found that these theories could be used to explain and verify cultural aspects of the learning design.

From this theoretical basis, design guidelines were proposed for a specific context. The five online themes were used as a framework to develop guidelines that were developed from a literature review of learners' responses to the online environment. Cultural theories were also used to identify worldview and values of the Arabic society so that learning preferences and guidelines could be created for learners with this background. The guidelines were then used to develop an online course, and these became the prototype design solution. This solution was tested iteratively in a context in the Sultanate of Oman, using a case study strategy, during two three month online professional development courses for university faculty. During each research cycle, data analysis was used to modify the design guidelines which then were used to modify the learning environment. This resulted in the development of design guidelines modified by practice and a learning environment modified by theory. Iterative research ensured that the design guidelines continued to shape the learning environment and that this practical context continued to modify and adapt the theory so that with each cycle of research, both the guidelines and the learning environment became more culturally suitable for these particular learners.

It was found that the refined guidelines developed in this research were consistent with, and extended, the existing models they built on. They were also able to apply cultural preferences to the design of the learning environment which became increasingly suitable for learners from an Oman cultural background. This provides

convincing evidence that this research has provided an effective design solution for culturally appropriate learning design, and for the Sultanate of Oman, where the teaching and learning challenge was identified. It was also found that culture does impact learning significantly, and this emphasises the necessity of using design principles that account for culture and enable the challenges of quality and access to be met more effectively.



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